

Patent claims

1. System with at least one banknote processing machine (10, 11), which is connected to a service centre (100) by means of a network (60),  
**characterized by**  
5 the exchange of data necessary for operation of the at least one banknote processing machine (10, 11) and/or of data produced during operation of the at least one banknote processing machine (10, 11) between the banknote processing machine (10, 11) and the service centre (100) via the network (60).
2. The system according to Claim 1, **characterized in that** the exchanged data  
10 comprise software.
3. The system according to Claim 1 or 2, **characterized in that** the exchanged data comprise comparison data and/or presets.
4. The system according to any one of Claims 1 to 3, **characterized in that** the  
15 data from the service centre (100) fully or partially replaces and/or enhances the data in the banknote processing machine (10, 11).
5. The system according to any one of Claims 1 to 4, **characterized in that** the network (60) is formed by the Internet.
6. The system according to any one of Claims 1 to 5, **characterized in that** the  
20 banknote processing machine (10, 11) and the service centre (100) have an interface (6, 42) for connection to the network (60).
7. The system according to any one of Claims 1 to 6, **characterized in that** a  
25 number of banknote processing machines (11, 11') are connected to one another (111), wherein the exchange of data with the service centre (100) takes place via one of the banknote processing machines (11') and/or via the connection (111) of the banknote processing machines (11, 11').
8. The system according to any one of Claims 1 to 7, **characterized in that** one or more banknote processing machines (11, 11') are assigned to an operator (110), which can monitor and/or control the banknote processing machines (11, 11') by means of a monitoring unit (112).
- 30 9. The system according to any one of Claims 1 to 8, **characterized in that** data from banknote processing machines (10, 11) and/or operators (110) are stored in a data memory of the service centre (100).

10. The system according to any one of Claims 1 to 9, **characterized in that** the service centre (100) evaluates the data from the banknote processing machines (10, 11) and/or operators (110).
- 5 11. The system according to any one of Claims 1 to 10, **characterized in that** the service centre (100) is connected to departments (101 to 104).
12. The system according to Claim 11, **characterized in that** the departments (101 to 104) provide data to the service centre (100).
13. The system according to Claim 11 or 12, **characterized in that** the departments (101 to 104) evaluate data from the service centre (100).
- 10 14. The system according to any one of Claims 11 to 13, **characterized in that** each department (101 to 104) can access data of the other departments (101 to 104).
- 15 15. The system according to any one of Claims 11 to 14, **characterized in that** the departments (101 to 104) request data from the banknote processing machines (10, 11).
16. The system according to any one of Claims 11 to 15, **characterized in that** the departments (101 to 104) provide data to the banknote processing machines (10, 11).
- 20 17. The system according to any one of Claims 11 to 16, **characterized in that** one department (101) provides software for operation of the banknote processing machines (10, 11).
18. The system according to any one of Claims 11 to 17, **characterized in that** one department (102) provides comparison data for the banknote processing machines (10, 11).
- 25 19. The system according to any one of Claims 11 to 18, **characterized in that** one department (103) provides data and/or software and/or information for repairing and/or servicing the banknote processing machines (10, 11).
- 30 20. The system according to any one of Claims 11 to 19, **characterized in that** one department (104) provides information concerning the banknote processing machines (10, 11).

21. The system according to any one of Claims 1 to 20, **characterized in that** at least one further service centre (100') is connected to the network (60).
- 5 22. The system according to any one of Claims 1 to 21, **characterized in that** at least one service organization (106) and/or service person is connected to the service centre (100) via the network (60).
- 10 23. The system according to any one of Claims 1 to 22, **characterized in that** the service centre (100) provides a trial version of the data for the banknote processing machines (10, 11), which can be used by the banknote processing machines (10, 11) only for a limited time and/or for a predetermined number of uses.
24. The system according to any one of Claims 1 to 23, **characterized in that** operators (110, 107) and/or service organizations (106) and/or banknote processing machines (10, 11) can search for information and/or data from the service centre (100) in a targeted manner.
- 15 25. The system according to any one of Claims 1 to 24, **characterized in that** the service centre (100) and/or the departments (101 to 104) communicate via the network (60) with the operators (110) and/or the service organizations (106) and/or service personnel, in particular by means of graphic signals and/or text signals and/or image signals and/or sound signals.
- 20 26. The system according to any one of Claims 1 to 25, **characterized in that** the exchange of data between the service centre (100) and the banknote processing machines (10, 11), the service organization (106), the operators (110), etc. uses a standard protocol, in particular HTTP or TCP/IP.
- 25 27. The system according to any one of Claims 1 to 26, **characterized in that** the service centre (100) requests data from the banknote processing machines (10, 11).
28. The system according to any one of Claims 1 to 27, **characterized in that** the service centre (100) adjusts and/or controls the banknote processing machines (10, 11).
- 30 29. The system according to any one of Claims 1 to 28, **characterized in that** the banknote processing machines (10, 11) request data from the service centre (100).

30. The system according to any one of Claims 1 to 29, **characterized in that** the service centre (100) charges fees for transmitting data to the banknote processing machines (10, 11).
- 5 31. The system according to any one of Claims 1 to 30, **characterized in that** the service centre (100) provides individual presets for each of the banknote processing machines (10, 11).
32. The system according to Claim 31, **characterized in that** each of the banknote processing machines (10, 11) checks whether new individual presets are available from the service centre (100) and, if so, uses these new presets.
- 10 33. The system according to any one of Claims 1 to 32, **characterized in that** adjustments to the respective banknote processing machine (10, 11) are undertaken by the banknote processing machine (10, 11) depending on the location.
- 15 34. The system according to any one of Claims 1 to 33, **characterized in that** the banknote processing machines (10, 11) send fault reports to the service centre (100) and/or the service organization (106) and/or the operator (110).
35. The system according to any one of Claims 1 to 34, **characterized in that** the service centre (100) and/or the service organization (106) and/or the operator (110) request fault reports from the banknote processing machines (10, 11).
- 20 36. The system according to Claim 34 or 35, **characterized in that** any faults that have occurred are displayed by the banknote processing machines (10, 11) by means of an input/output device (12, 45).
- 25 37. The system according to any one of Claims 34 to 36, **characterized in that**, when a fault has occurred and/or when a fault report has been received from the banknote processing machines (10, 11), the service centre (100) generates instructions to remove this fault and provides said instructions to the respective banknote processing machine (10, 11).
- 30 38. The system according to any one of Claims 1 to 37, **characterized in that**, for certain operating processes and/or fault clearance operations, the presence of one or more persons is absolutely necessary.

39. The system according to Claim 38, **characterized in that** the presence of the person or persons is monitored, in particular by the person or persons identifying themselves by means of individual cards (14).
- 5 40. The system according to any one of Claims 1 to 39, **characterized in that** the service centre (100) informs the service organization (106) and/or a service person if certain faults occur on one of the banknote processing machines (10, 11).
- 10 41. The system according to Claim 40, **characterized in that** the service centre (100) transmits to the service organization (106) and/or to the service person information concerning the type of fault and/or concerning the measures to be carried out and/or concerning replacement parts that are required.
- 15 42. The system according to any one of Claims 1 to 41, **characterized in that** the service centre (100) checks whether a banknote processing machine (10, 11), a service organization (106) and an operator (107, 110) are authorized to exchange data with the service centre (100).
43. The system according to any one of Claims 1 to 42, **characterized in that** the banknote processing machines (10, 11), the service organizations (106) and the operators (107, 110) check whether the service centre (100) is authorized to exchange data with them.
- 20 44. The system according to any one of Claims 1 to 43, **characterized in that** data from the service centre (100) are loaded by a banknote processing machine (10, 11) if the data from the service centre (100) are of a newer version.
- 25 45. The system according to any one of Claims 1 to 44, **characterized in that** the exchange of data between the service centre (100) and the banknote processing machines (10, 11) takes place at a specified point of time.
46. The system according to any one of Claims 1 to 45, **characterized in that** the exchange of data between the service centre (100) and the banknote processing machines (10, 11) is refused by the banknote processing machines (10, 11).
- 30 47. The system according to Claim 46, **characterized in that**, if the exchange of data is refused by a banknote processing machine (10, 11), the service centre (100) takes control of the banknote processing machine (10, 11) in order to perform the exchange of data.

48. The system according to any one of Claims 1 to 47, **characterized in that** the data of the banknote processing machine (10, 11) are backuped prior to an exchange of data into the banknote processing machine (10, 11) and/or the service centre (100).
- 5 49. The system according to Claim 48, **characterized in that** the backuped data of the banknote processing machine (10, 11) can be used again or further if the exchange of data between the service centre (100) and the banknote processing machine (10, 11) fails.
- 10 50. The system according to any one of Claims 1 to 49, **characterized in that** fundamental parts of the data of the banknote processing machines (10, 11) cannot be altered by an exchange of data.
51. The system according to any one of Claims 1 to 50, **characterized in that** the banknote processing machines (10, 11) check whether the data to be exchanged originate from an authorized source.
- 15 52. The system according to any one of Claims 1 to 51, **characterized in that** the banknote processing machines (10, 11) check prior to each use of data whether the data to be used originate from an authorized source.
- 20 53. The system according to any one of Claims 1 to 52, **characterized in that** data to be exchanged, which must be paid, are identified, and exchange with the banknote processing machines (10, 11) is possible only if proof of payment exists.
54. The system according to any one of Claims 1 to 53, **characterized in that** data to be exchanged, which must be paid, are identified, and use by the banknote processing machines (10, 11) is possible only if proof of payment exists.
- 25 55. The system according to Claim 53 or 54, **characterized in that** the proof of payment is provided by an individual identifier of a banknote processing machine (10, 11).
- 30 56. The system according to Claim 53 or 55, **characterized in that** the proof of payment is provided by an identifier for a number of banknote processing machines (10, 11).

57. The system according to any one of Claims 1 to 56, **characterized in that** an amount to be paid for data is set depending on the use of the data by the banknote processing machine (10, 11).
- 5 58. The system according to any one of Claims 1 to 57, **characterized in that** data concerning the banknotes (BN) processed by the banknote processing machines (10, 11) are transmitted to the service centre (100).
59. The system according to Claim 58, **characterized in that** comparison data are generated by the service centre (100) from the data concerning the banknotes (BN).
- 10 60. The system according to Claim 59, **characterized in that** comparison data generated by the service centre (100) are exchanged with the banknote processing machines (10, 11).
- 15 61. The system according to any one of Claims 1 to 60, **characterized in that** the service centre (100) generates an alarm message as a result of exchanging data with one or more of the banknote processing machines (10, 11); which alarm message is sent to at least one of the banknote processing machines (10, 11).
- 20 62. The system according to Claim 61, **characterized in that** the alarm message places the banknote processing machines (10, 11) in a special mode of operation.
63. The system according to Claim 61 or 62, **characterized in that** the alarm message contains further data, which are generated by the service centre (100) and/or originate from the banknote processing machine(s) (10, 11) whose data triggered the generation of the alarm message.
- 25 64. The system according to any one of Claims 61 to 63, **characterized in that** the alarm message is generated when counterfeit or suspect banknotes are found.
- 30 65. The system according to any one of Claims 1 to 64, **characterized in that** a service person sets up by means of the banknote processing machines (10, 11) or a computer (50) a connection via the network (60) to the service centre (100) and/or the service organization (106) in order to request assistance and/or replacement parts.

66. The system according to Claim 65, **characterized in that** the operations carried out by the service person are communicated via the network (60) to the service centre (100) and/or the service organization (106).
- 5 67. The system according to Claim 66, **characterized in that** the service centre (100) and/or the service organization (106) charges fees based on the operations communicated.
68. The system according to any one of Claims 1 to 67, **characterized in that** the service centre (100) informs the operating person if certain faults occur on one of the banknote processing machines (10, 11).
- 10 69. The system according to Claim 68, **characterized in that** the service centre (100) transmits information concerning the type of fault and/or concerning the measures to be carried out and/or concerning replacement parts that are required to the operating person.
- 15 70. The system according to Claim 68 or 69, **characterized in that** the service centre (100) asks the operating person to deliver the necessary replacement parts to the location of the respective banknote processing machine (10, 11).
71. The system according to any one of Claims 68 to 70, **characterized in that** the service centre (100) asks the departments (103) to provide data and/or software for clearing the fault on the banknote processing machines (10, 11).
- 20 72. The system according to Claim 71, **characterized in that** the departments (103) provide the data and/or software for clearing the fault on the banknote processing machines (10, 11) by text and/or graphically and/or optically and/or acoustically.
- 25 73. The system according to any one of Claims 1 to 72, **characterized in that**, when certain faults occur, the service centre (100) clears the faults via the network (60).
74. The system according to any one of Claims 1 to 73, **characterized in that** operating persons of the banknote processing machines (10, 11) define specific configuration data.
- 30 75. The system according to Claim 74, **characterized in that** the specific configuration data are stored in the banknote processing machine (10, 11), the



service centre (100) and/or the service organization (106) and/or the computer (112) of the operator (110).

- 5 76. The system according to Claim 75, **characterized in that** the stored specific configuration data are used by an operating person of the banknote processing machines (10, 11) when this operating person operates the banknote processing machine (10, 11).
77. Banknote processing machine, **characterized in that** the banknote processing machine (10, 11) is used in a system according to any one of Claims 1 to 76.
- 10 78. The banknote processing machine according to Claim 77, **characterized in that** the banknote processing machine (10, 11) has an interface (6, 42) for connection to the network (60).
79. Service centre, **characterized in that** the service centre (100) is used in a system according to any one of Claims 1 to 76.
- 15 80. The service centre according to Claim 79, **characterized in that** the service centre (100) has an interface for connection to the network (60).
- 20 81. Method for operating at least one banknote processing machine as well as a service centre,  
**characterized by**  
the exchange of data necessary for operation of the at least one banknote processing machine (10, 11) between the at least one banknote processing machine (10, 11) and the service centre (100), in accordance with a system consisting of the at least one banknote processing machine (10, 11) and the service centre (100), according to any one of Claims 1 to 76.